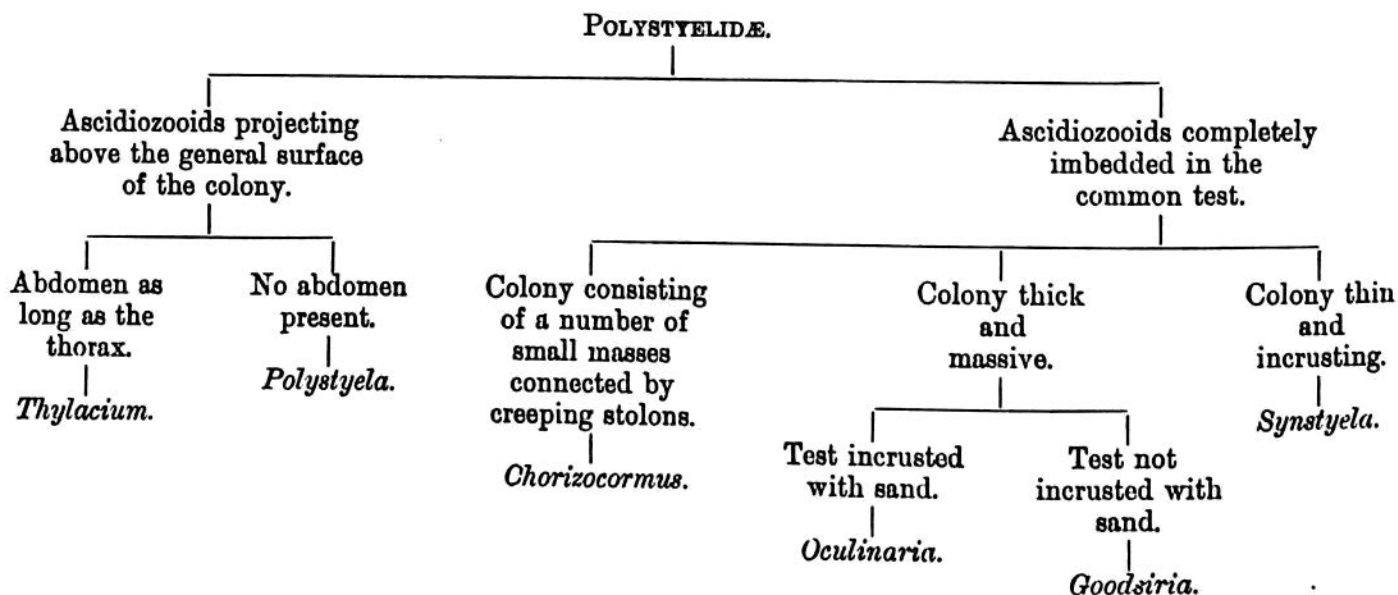


A distinct abdomen is present in the Ascidiozoid only in the genus *Thylacium*, Carus, so far as is known. In all other members of the family the alimentary canal lies alongside the branchial sac as it does in the Botryllidæ and in most of the Simple Ascidians. In some cases (e.g., *Synstyela incrustans*) the test may be prolonged beyond the Ascidiozooids to form a spreading margin to the colony, in which numerous vessels ramify and terminate in dilated bulbs. It is probably in connection with these terminal bulbs that young Ascidiozooids are formed.

The branchial sac is always large. When longitudinal folds are present (e.g., *Goodsiria placenta*) they are in the rudimentary condition<sup>1</sup> so frequently found amongst the Styelinæ. In some cases (e.g., *Goodsiria coccinea*) there are no folds in the branchial sac. Dorsal languets are never present in the family.

The reproductive organs are present on both sides of the body in the form of little "polycarps" or masses of ovaria and spermata partly imbedded in the mantle, and projecting into the peribranchial cavity just as in the species of *Polycarpa*. The curious "endocarps" of unknown function, which have previously only been known from the Styelinæ, are also present on the mantle of some if not all species of the Polystyelidæ (e.g., *Synstyela incrustans*, see Pl. XLVI. fig. 14). In some cases the polycarps are hermaphrodite (e.g., *Goodsiria placenta*), as they are in the Simple Ascidians, while in other cases they are unisexual (e.g., *Goodsiria pedunculata* and *Synstyela incrustans*, Pl. XLVI. figs. 12, 13), and the male and female polycarps differ somewhat in appearance.

The genera<sup>2</sup> which belong to this family may be distinguished by the following characters:—



<sup>1</sup> See Herdman, On Individual Variation in Simple Ascidians, *Trans. Lit. and Phil. Soc. of Liverpool*, vol. for 1882.

<sup>2</sup> It is possible that the genus *Pyura*, founded by Blainville for an animal discovered by Molina (*Saggio sulla Storia naturale del Chili*, 1782), and since found by Cunningham (*Notes on the Natural History of the Strait of Magellan*, Edinburgh, 1871, p. 430) on the shores of the Bay of Arauco, and described as being a "Social Ascidian," belongs to this family. But the little that is known of its structure is not sufficient to determine its position with any certainty.